

Proposed Amendments - 10/577,914

1. (Currently amended) A process for producing metal-matrix composite materials comprising at least one portion of magnesium or of a magnesium alloy, the process comprising:
and at least one production step in which thixomolding a granulate of magnesium or of a magnesium alloy and a granulate of a silicon or of a silicon alloy takes place, wherein to produce a Mg₂Si phase with a volumetric content of at least 2% is dispersed into the metal-matrix metal matrix.
2. (Canceled) The process as claimed in claim 1, wherein the metal matrix comprises magnesium or a magnesium alloy.
3. (Currently amended) The process as claimed in claim 1, wherein ~~[[a]] the granulate of silicon or of a silicon alloy and [[a]] the granulate of magnesium or of a magnesium alloy are processed jointly in a thixomolding process.~~
4. (Previously Presented) The process as claimed in claim 3, wherein the ~~amount and/or the size of~~ Mg₂Si phase crystallites which form ~~and/or~~ ~~[[a]]~~ silicon content of ~~[[a]] the metal-matrix composite material [[are]] is determined via the size and/or the amount of the granulates particles of silicon or of a the-silicon alloy.~~

5. (Currently amended) The process as claimed in claim 1, wherein in the step of thixomolding process ~~includes producing the cast body is produced from the metal-matrix composite materials~~ which is then further processed.

6. (Currently amended) The process as claimed in claim 5, wherein the cast body is formed from the metal-matrix composite materials subsequently in at least one process step.

7. (Currently amended) The process as claimed in claim 6, wherein the cast body is formed from the metal-matrix composite materials subsequently in at least one of a forging process and/or extrusion process.

8. (Currently amended) The process as claimed in claim 1, further including the step of adding ~~wherein in the production of the composite materials~~ addition of at least approximately ~~roughly~~ 2% by weight Si and at most approximately ~~roughly~~ 15% by weight Si ~~takes place~~.

9. (Previously Presented) The process as claimed in claim 1, wherein a Mg₂Si phase with a volumetric content of at least approximately ~~roughly~~ 5% to roughly at most approximately ~~roughly~~ 40% is dispersed into a metal matrix.

10. (Currently amended) The process as claimed in claim 1, wherein the granulate of magnesium or of a magnesium alloy is in the production of metal-matrix composite materials ~~one of the standard~~

magnesium alloys AZ91, AM50, MR1230D, MR1253M or a magnesium die casting alloy is used.

11. (Currently amended) The process as claimed in claim 1, wherein after adding the granulate of a silicon or of a silicon alloy ~~Si~~ the heating rate of the thixomolding ~~step~~ device is reduced when the ~~a~~ melt first forms.

12-14. (Cancelled)

15. (New) The process as claimed in claim 3, wherein the amount and the size of Mg_2Si phase crystallites which form and silicon content of the metal-matrix composite material are determined via the size and the amount of the granulates of silicon or of a silicon alloy.

16. (New) The process as claimed in claim 3, wherein the amount of Mg_2Si phase crystallites which form and silicon content of the metal-matrix composite material are determined via the amount of the granulates of silicon or of a silicon alloy.